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FORMULA INDEX

The following index of *new* compounds of known empirical formula is arranged according to Richter's system.

The elements are given in the order C, H, O, N, Cl, Br, I, F, S and P, and the remainder alphabetically.

The compounds are arranged in groups according to the number of carbon atoms (thus C_1 group, C_2 group, etc.); according to the number of other elements besides carbon contained in the molecule (thus C_5 IV indicates that the molecule contains five carbon atoms and four other elements); according to the nature of the elements present in the molecule (given in the above order); and according to the number of atoms of each single element (except carbon) present in the molecule.

Salts are placed with the compounds from which they are derived. The chlorides, bromides, iodides and cyanides of quaternary ammonium bases, however, are registered as group substances.

C_3 Group

C_3 II

C_4 Group

C_4 III

C_5 Group

C_5 III

$C_5H_4O_3N_4$ Uric acid, copper, nickel, potassium and zinc salts (Curtman and Hart) 1921, **46,** 600

$C_5H_{10}O_3N_2$ α-Ureidobutyric acid (West) 1918, **34,** 192

Ureidodimethylacetic acid (West) 1918, **34,** 192

C_6 Group

C_6II

$C_6H_{10}O_5$ Epichitose (Levene) 1919, **39,** 76

$C_6H_{12}O_7$ *d*-Allonic acid, brucine salt (Levene and Meyer) 1916, **26,** 362

d-Altronic acid, brucine salt (Levene and Meyer) 1916, **26,** 363

Chitaric acid, brucine salt (Levene and Meyer) 1916, **26,** 364

Chitonic acid, brucine and calcium salts (Levene and Meyer) 1916, **26,** 364

d-Galactonic acid, brucine salt (Levene and Meyer) 1916, **26,** 361

d-Gluconic acid, brucine salt (Levene and Meyer) 1916, **26,** 358

d-Gulonic acid, brucine salt (Levene and Meyer) 1916, **26,** 359

d-Idonic acid, brucine salt (Levene and Meyer) 1916, **26,** 360

d-Mannonic acid, brucine salt (Levene and Meyer) 1916, **26,** 359

d-Talonic acid, brucine salt (Levene and Meyer) 1916, **26,** 362

$C_6H_{13}I$ 4-Methylpentyl iodide (Levene and Allen) 1916, **27,** 451

$C_6H_{15}N$ Triethylamine, hydroiodide mercuric iodide (Woodward and Alsberg) 1921, **46,** 5

C_6III

$C_6H_6O_3N_2$ 2, 6-Dioxy-5-methylpyrimidine-4-aldehyde (thymine-4-aldehyde) (Johnson and Cretcher) 1916, **26,** 112

$C_6H_7O_3N_3$ 2, 6-Dioxy-5-methylpyrimidine-4-aldehyde oxime (Johnson and Cretcher) 1916, **26,** 112

$C_6H_8O_3N_2$ Proline hydantoin (Dakin) 1920, **44,** 527

$C_6H_8O_3N_2$ γ-Hydroxyproline hydantoin (Dakin) 1920, **44**, 518

$C_6H_9O_2N_2$ Deaminocarnosine (Baumann and Ingvaldsen) 1918, **35**, 269

$C_6H_{12}O_{16}P_4$ Phosphoric inosite ester (Anderson) 1920, **43**, 126

$C_6H_{13}O_5N$ Dextro-*d*-ribohexosaminic acid (Levene and Clark) 1921, **46**, 28

Epichitosamine, hydrochloride, osazone (Levene) 1919, **39**, 69

Levo-*d*-ribohexosaminic acid (Levene and Clark) 1921, **46**, 26

Lyxohexosamine, hydrochloride (Levene) 1916, **26**, 161

$C_6H_{13}O_6N$ Epichitosaminic acid (Levene) 1918, **36**, 79

d-Levoxylohexosaminic acid (Levene) 1918, **36**, 86

$C_6H_{18}O_{24}P_6$ Inosite hexaphosphoric acid, barium and silver salt (Anderson) 1920, **44**, 436

C_6IV

$C_6H_6O_2N_2S$ 2-Thio-5-methyl-6-oxypyrimidine-4-aldehyde (2-thiothymine aldehyde) (Johnson and Cretcher) 1916, **26**, 109

$C_6H_7O_2N_3S$ 2-Thio-5-methyl-6-oxypyrimidine-4-aldehyde oxime (Johnson and Cretcher) 1916, **26**, 109

$C_6H_{10}O_3NI$ β-Iodopropionylalanine (Baumann and Ingvaldsen) 1918, **35**, 270

$C_6H_{12}O_5NCl$ Dextro-*d*-ribohexosaminic acid lactone hydrochloride (Levene and Clark) 1921, **46**, 29

Dextro-*d*-xylohexosamininic acid lactone hydrochloride (Levene) 1918, **36**, 85

Epichitosaminic acid lactone hydrochloride (Levene) 1918, **36**, 77

Levo-*d*-ribohexosaminic acid lactone hydrochloride (Levene and Clark) 1921, **46**, 27

C_7 Group

C_7 II

$C_7H_{12}O_6$ Anhydrosedoheptose (La Forge and Hudson) 1917, **30**, 73

$C_7H_{14}O_2$ 5-Methylhexylic acid (Levene and Allen) 1916, **27**, 442

$C_7H_{14}O_7$ α-*d*-Guloheptose (La Forge) 1920, **41**, 253

d-Mannoketoheptose (La Forge) 1916–1917, **28**, 518

$C_7H_{15}I$ 5-Methylhexyl iodide (LEVENE and ALLEN) 1916, **27**, 446

$C_7H_{16}O$ 5-Methylhexyl alcohol (LEVENE and ALLEN) 1916, **27**, 443

$C_7H_{16}O_7$ α-Guloheptitol (LA FORGE) 1920, **41**, 255

β-Guloheptitol (LA FORGE) 1920, **41**, 256

α-Sedoheptitol (LA FORGE and HUDSON) 1917, **30**, 68

C_7 III

$C_7H_{15}ON$ 5-Methylhexylic amide (LEVENE and ALLEN) 1916, **27**, 442

$C_7H_{15}O_7N$ Chondrosaminoheptonic acid, copper salt (LEVENE) 1916, **26**, 152

$C_7H_{15}O_9P$ α-Methylglucosidophosphoric acid (LEVENE and MEYER) 1921, **48**, 235

C_8 Group

C_8 II

$C_8H_{16}O_2$ 6-Methylheptylic acid (LEVENE and ALLEN) 1916, **27**, 452

$C_8H_{17}O$ 6-Methylheptyl alcohol (LEVENE and ALLEN) 1916, **27**, 452

C_8 III

$C_8H_{17}ON$ 6-Methylheptylic amide (LEVENE and ALLEN) 1916, **27**, 452

C_8 IV

$C_8H_{10}O_2N_2S$ 2-Ethylmercapto-5-methyl-6-oxypyrimidine-4-aldehyde (JOHNSON and CRETCHER) 1916, **26**, 111

$C_8H_{11}O_2N_3S$ 2-Ethylmercapto-5-methyl-6-oxypyrimidine-4-aldehyde oxime (JOHNSON and CRETCHER) 1916, **26**, 111

C_8 V

$C_8H_7O_{10}N_2AsHg$ 3, 5-Dinitro-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 537

$C_8H_8O_8NAsHg$ 3-Nitro-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 536

$C_8H_9O_7N_2AsHg$ 3-Nitroarsanilic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 535

$C_8H_{10}O_6NAsHg$ 3-Amino-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 537

$C_8H_{11}O_6N_2AsHg$ 3, 5-Diamino-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 538

C_8 VI

$C_8H_9O_5NBrAsHg$ 3-Bromoarsanilic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 541

C_9 Group

C_9 II

$C_9H_{16}O_4$ 4-Methylpentylmalonic acid (LEVENE and ALLEN) 1916, **27**, 451

$C_9H_{18}O_2$ Ethyl 5-methylhexylate (LEVENE and ALLEN) 1916, **27**, 442

7-Methyloctylic acid (LEVENE and ALLEN) 1916, **27**, 447

$C_9H_{19}O_6$ 3,5,6-Trimethylglucose (LEVENE and MEYER) 1921, **48**, 244

$C_9H_{19}I$ 7-Methyloctyl iodide (LEVENE and ALLEN) 1916, **27**, 448

$C_9H_{20}O$ 7-Methyloctyl alcohol (LEVENE and ALLEN) 1916, **27**, 448

C_9 III

$C_9H_{18}O_9P$ 1,2-Monoacetonephosphoric acid glucoside (LEVENE and MEYER) 1921, **48**, 238

$C_9H_{19}ON$ 7-Methyloctylic amide (LEVENE and ALLEN) 1916, **27**, 447

C_9 IV

$C_9H_9O_7AsHg$ 4-Carboxyphenylarsinic acid mercuric acetate (*p*-Benzarsinic acid mercuric acetate) (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 539

$C_9H_{14}O_8N_3P$ Cytidinephosphoric acid, brucine and barium salts (LEVENE) 1919, **39**, 77

$C_9H_{14}O_9N_2P$ Urindinphosphoric acid, ammonium, barium, brucine and lead salts (LEVENE) 1918, **33**, 233; 1919, **40**, 395; 1920, **41**, 1

C_{10} Group

C_{10} I

$C_{10}H_{22}$ 2-Butylhexane (Levene and Cretcher) 1918, **33,** 510

C_{10} II

$C_{10}H_{16}O$ Oil isolated from urine (Anderson) 1916, **26,** 395, 401, 409

$C_{10}H_{18}O_4$ 5-Methylhexylmalonic acid (Levene and Allen) 1916, **27,** 446

$C_{10}H_{20}O_2$ 2-Butylhexylic acid (Levene and Cretcher) 1918, **33,** 508

Ethyl 6-methylheptylate (Levene and Allen) 1916, **27,** 452

8-Methylnonylic acid (Levene and Allen) 1916, **27,** 454

$C_{10}H_{21}O_6$ 3,5,6-Trimethyl methylglucoside (Levene and Meyer) 1921, **48,** 244

$C_{10}H_{21}I$ 2-Butylhexyl iodide (Levene and Cretcher) 1918, **33,** 509

$C_{10}H_{22}O$ 2-Butylhexyl alcohol (Levene and Cretcher) 1918, **33,** 509

C_{10} III

$C_{10}H_{10}O_2N_2$ *d*-α-Phenylmethylhydantoin (West) 1918, **34,** 190

$C_{10}H_{12}O_3N_2$ *d*-α-Phenylureidopropionic acid (West) 1918, **34,** 189

$C_{10}H_{14}O_3N_2$ Hydroxyprolylproline anhydride (Dakin) 1920, **44,** 524

$C_{10}H_{14}O_8N_5$ Guanylic acid, brucine salt (Levene) 1919, **40,** 171

$C_{10}H_{21}O_9P$ 3,5,6-Trimethyl-2-phosphoric acid methyl glucoside (Levene and Meyer) 1921, **48,** 245

C_{10} IV

$C_{10}H_{16}O_3N_2S$ 2-Thio-4-diethyoxymethyl-5-methyl-6-oxypyrimidine (Johnson and Cretcher) 1916, **26,** 108

$C_{10}H_{17}O_{12}N_3P_2$ Hexocytidindiphosphoric acid, barium and brucine salts (Levene) 1921, **48,** 123

C_{10} VI

$C_{10}H_9O_8NBrAsHg$ 3-Bromooxalylarsanilic acid mercuric acetate (Raiziss, Kolmer, and Gavron) 1919, **40,** 541

C_{11} Group

C_{11} II

$C_{11}H_{20}O_4$ Dibutylmalonic acid (Levene and Cretcher) 1918, **33**, 507

$C_{11}H_{20}O_5$ Ethyl α-methyl-γ,γ-diethoxyacetoacetate (Johnson and Cretcher) 1916, **26**, 107

6-Methylheptylmalonic acid (Levene and Allen) 1916, **27**, 453

$C_{11}H_{22}O_2$ Ethyl 7-methyloctylate (Levene and Allen) 1916, **27**, 447

C_{11} III

$C_{11}H_{10}O_5N_2$ Antiphenylhydantoinhydroxyacetic acid (Dakin) 1921, **48**, 287

Paraphenylhydantoinhydroxyacetic acid (Dakin) 1921, **48**, 284

$C_{11}H_{19}ON_3$ Oil from urine, semicarbazone (Anderson) 1916, **26**, 393, 401

C_{11} IV

$C_{11}H_{10}O_3NI_3$ Thyroxin, ammonium, barium, calcium, copper, magnesium, nickel, potassium and zinc salts, hydrochloride and sulfate (Kendall and Osterberg) 1919, **40**, 314

$C_{11}H_{18}O_{13}N_2P_2$ Hexothymidindiphosphoric acid, barium and brucine salts (Levene) 1921, **48**, 123

C_{12} Group

C_{12} II

$C_{12}H_{22}O_4$ 7-Methyloctylmalonic acid (Levene and Allen) 1916, **27**, 449

$C_{12}H_{22}O_6$ 3,5,6-Trimethyl-1,2-acetoneglucose (Levene and Meyer) 1921, **48**, 243

$C_{12}H_{24}O_2$ 4-Butyloctylic acid (Levene and Cretcher) 1918, **33**, 511

Ethyl 2-butylhexylate (Levene and Cretcher) 1918, **33**, 508

$C_{12}H_{25}I$ 4-Butyloctyl iodide (Levene and Cretcher) 1918, **33**, 511

$C_{12}H_{26}O$ 4-Butyloctyl alcohol (Levene and Cretcher) 1918, **33**, 511

$C_{13}H_{19}O_6N_2Br$ *d*-Mannoaldoheptose *p*-bromophenylhydrazone (La Forge) 1916–1917, **28,** 522
d-Mannoketoheptose *p*-bromophenylhydrazone (La Forge) 1916–1917, **28,** 518

C_{14} Group

C_{14} II

$C_{14}H_{26}O_4$ Ethyl 5-methylhexylmalonate (Levene and Allen) 1916, **27,** 446
$C_{14}H_{28}O_2$ Ethyl 4-butyloctylate (Levene and Cretcher) 1918, **33,** 511

C_{14} III

$C_{14}H_{12}O_2N_2$ *d*-α-Naphthylmethylhydantoin (West) 1918, **34,** 191
dl-α-Naphthylmethylhydantoin (West) 1918, **34,** 190
$C_{14}H_{14}O_3N_2$ *d*-α-Napthylureidopropionic acid (West) 1918, **34,** 191
$C_{14}H_{21}O_2N$ *n*-Heptyl phenylurethane (Levene and Taylor) 1918, **35,** 283
5-Methylhexyl phenylurethane (Levene and Allen) 1916, **27,** 446

C_{15} Group

C_{15} II

$C_{15}H_{28}O_4$ Diethyl dibutylmalonate (Levene and Cretcher) 1918, **33,** 507
Ethyl 6-methylheptylmalonate (Levene and Allen) 1916, **27,** 453

C_{15} III

$C_{15}H_{23}O_2N$ 6-Methylheptyl phenylurethane (Levene and Allen) 1916, **27,** 453

C_{16} Group

C_{16} II

$C_{16}H_{30}O_4$ Ethyl 7-methyloctylmalonate (Levene and Allen) 1916, **27,** 448

C_{16} III

$C_{16}H_{14}O_3N_2$ Phenylaminomalic acid anil (Dakin) 1921, **48,** 290
$C_{16}H_{22}O_{10}P$ 1,2-Monoacetone-6-benzoyl phosphoric acid glucoside (Levene and Meyer) 1921, **48,** 239
$C_{16}H_{25}O_2N$ 7-Methyloctyl phenylurethane (Levene and Allen) 1916, **27,** 448

C_{16} IV

$C_{16}H_{15}O_4N_3S$ α-Naphthalenesulfonylhistidine (Baumann and Ingvaldsen) 1918, **35,** 275

C_{17} Group

C_{17} II

$C_{17}H_{32}O_4$ Diethyl 2-butylhexylmalonate (Levene and Cretcher) 1918, **33,** 510

C_{18} Group

C_{18} III

$C_{18}H_{17}O_4N$ Cinnamoyltyrosine (Ando) 1919, **38,** 9

$C_{18}H_{20}O_8N_2$ Benzeneazophenol glucuronate (Salant and Bengis) 1916, **27,** 408

$C_{18}H_{20}O_9N_2$ Benzeneazoresorcinol glucuronate (Salant and Bengis) 1916, **27,** 407

$C_{18}H_{24}O_4N_4$ Xylohexosamine osazone (Levene) 1916, **26,** 160

C_{19} Group

C_{19} III

$C_{19}H_{24}O_5N_4$ Sedoheptose phenylosazone (La Forge and Hudson) 1917, **30,** 65

$C_{19}H_{24}O_6N_2$ *d*-Mannoketoheptose phenylosazone (La Forge) 1916–1917, **28,** 520

C_{19} IV

$C_{19}H_{22}O_5N_4Br_2$ Sedoheptose *p*-bromophenyl osazone (La Forge and Hudson) 1917, **30,** 66

C_{20} Group

C_{20} III

$C_{20}H_{21}O_4N$ Cinnamoyltyrosine ester (Ando) 1919, **38,** 8

C_{21} Group

C_{21} II

$C_{21}H_{20}O_6$ Dibenzalanhydrosedoheptose (La Forge and Hudson) 1917, **30,** 72

C_{21} III

$C_{21}H_{22}N_4O_8$ *p*-Nitrophenacornithinic acid (Sherwin and Helfand) 1919, **40,** 25

C_{22} Group

C_{22} III

$C_{22}H_{21}O_3N_3$ Phenylaminomalic acid dianilide (DAKIN) 1921, **48**, 290

C_{22} IV

$C_{22}H_{26}O_6NCl$ Dibenzaldextro-*d*-ribohexosaminic ethyl ester hydrochloride (LEVENE and CLARK) 1921, **46**, 30

C_{26} Group

C_{26} IV

$C_{26}H_{25}O_8N_3S_2$ *α*-Naphthalenesulfonylhistidine naphthalenesulfonate (BAUMANN and INGVALDSEN) 1918, **35**, 274

C_{28} Group

C_{28} II

$C_{28}H_{28}O_7$ Tribenzal-*α*-sedoheptitol (LA FORGE and HUDSON) 1917, **30**, 69

Tribenzal-*β*-sedoheptitol (LA FORGE and HUDSON) 1917, **30**, 70

C_{30} Group

C_{30} II

$C_{30}H_{48}O_2$ Mycosterol and digotinin compound (IKEGUCHI) 1919, **40**, 177

$C_{30}H_{48}O_3$ Hydroxymycosterol (IKEGUCHI) 1919, **40**, 180

C_{32} Group

C_{32} II

$C_{32}H_{50}O_3$ Mycosterol acetate (IKEGUCHI) 1919, **40**, 179

C_{36} Group

C_{36} II

$C_{36}H_{54}O_6$ Hydroxymycosterol acetate (IKEGUCHI) 1919, **40**, 181

C_{36} III

$C_{36}H_{33}O_{10}N$ Pentabenzoylxylohexosamine (LEVENE) 1916, **26**, 159

C_{57} Group

C_{57} III

$C_{57}H_{101}O_{13}N$ Acetylcerasin (Levene and West) 1917, **31,** 64

C_{60} Group

C_{60} III

$C_{60}H_{105}O_{15}N$ Acetylphrenosin (Levene and West) 1917, **31,** 642

C_{69} Group

C_{69} III

$C_{69}H_{102}O_{28}N_4$ *p*-Nitrobenzoylphrenosin (Levene and West) 1917, **31,** 647

$C_{69}H_{105}O_{12}N$ Benzoylphrenosin (Levene and West) 1917, **31,** 644

C_{75} Group

C_{75} III

$C_{75}H_{111}O_{12}N$ Cinnamoylphrenosin (Levene and West) 1917, **31,** 646

SUGGESTIONS FOR THE PREPARATION OF MANUSCRIPTS.

COPY.

All manuscripts should be copied with triple spacing and $1\frac{1}{4}$ inch margins.

The original typewritten copy should be submitted for publication, not a carbon copy. It should be sent flat, not rolled or folded. All corrections on the manuscript should be clearly written in ink. Manuscripts should be consistent in style; a word should not be abbreviated in one line and written out a few lines below.

TITLE.

The title, author's name, and laboratory where the work was done should appear as the heading of the paper, followed by the words: Received for publication, —, —. The title, etc., should be written on a separate sheet.

An abbreviated form of the title, not exceeding thirty-six letters in length, to be used as a running headline, should be given, also on a separate sheet.

HEADINGS.

Major headings, such as INTRODUCTION, EXPERIMENTAL, DISCUSSION, SUMMARY, CONCLUSION, BIBLIOGRAPHY, also TABLE in table headings, are printed in small capitals, and therefore should be underlined twice.

Minor headings, whether center or side, and descriptive matter in table headings, are printed in italics, and therefore underlined once in the manuscript. Capitalize the nouns, adjectives, pronouns, verbs, Cc., Gm., Per Cent, etc.

Dates are not underlined, except when they occur in an italicized heading.

The form Sept. 15, 1915, is preferred to IX–15–15

TEXT.

Begin every experiment, table, or quotation of over five lines on a new sheet. When the text is resumed start with another fresh sheet. This method brings the material of the entire manuscript (except foot-notes, etc.) in sequence, but permits, without mutilation of the manuscript, the separation in the Printer's office of tables, etc., which are set up separately.

Number the sheets consecutively throughout. Mark in ink the place for each illustration.

TABLES.

The form for table headings has already been given under "HEADINGS." Table column headings are written in small letters and followed by periods (see Table I).

Words like *gm.*, *cc.*, *per cent*, *°C.*, etc., referring to an entire column in a table, are written in small letters at the top of the column, and underlined once.

In tables use ditto marks for words when possible, but not for figures.

TABLE I.

Changes in the Blood of Rabbit 1 after Hemorrhage.

Date.	Amount of blood removed.	Hemoglobin.	Red blood corpuscles.	Remarks.
1915	*cc.*	*per cent*		
Sept. 13	10	89	5,160,000	Weight 1,605 gm.
" 14	10	68	2,870,000	No nucleated red cells.
" 15	10	75	3,990,000	" " " "
" 16	10	58	3,070,000	" " " "

FOOT-NOTES.

Foot-Notes to Text.—Typewrite all foot-notes together at the end of the paper and number them consecutively from 1 up, to correspond with the reference numbers in the text.

Number all foot-note references consecutively throughout the paper; *i.e.*, if the foot-note references on the first page are 1, 2, 3, those on the second page should be 4, 5, 6, etc. Superior numerals (located as [1, 2, 3]) should be used in the text to indicate foot-notes.

Double spacing should be used in typewriting foot-notes.

Foot-Notes to Tables.—For foot-notes to tables the following symbols are used (*, †, ‡, etc.), not numbered, in order to distinguish them from foot-notes to text.

REFERENCES.

References are usually printed in the form of foot-notes, and as such are numbered and located with the other foot-notes. If a given article is referred to more than once the foot-note is printed only with the first reference. The number of the foot-note is repeated at subsequent points in the text where the same article is referred to. Do not use *loc. cit.*

If the author prefers, the references may be printed in a bibliography at the end of the paper. In this case one of two systems is usually adopted: (*a*) The references in the bibliography are arranged and numbered in the order of their appearance in the text and independently of the foot-notes. (*b*) They are arranged alphabetically according to the names of the authors. In this case the text reference is the name of the author followed by the year of the publication referred to. If more than one article by the same author in a given year is referred to, the letters *a*, *b*, *c*, etc., may be used to differentiate them. This system is convenient because, among other reasons, of the ease with which new references can be inserted in the manuscript, and of the readiness with which a given reference can be located in the printed bibliography.

Text references to a bibliography are indicated by numbers in parentheses instead of the superior numbers used for foot-notes. Thus "Ehrlich[1]" indicates a foot-note; but "Ehrlich (1)" or "Ehrlich (1910, *a*)" or "(Ehrlich, 1910, *a*)" indicates a reference in the bibliography. Two separate series of numbers can thus be used in the same text to indicate respectively foot-notes and references in the bibliography.

The form for references is indicated by the following example,

the order of data being: author, initials, journal (underlined), year, volume (small Roman numerals), and page:

[3] Fisher, E., *Ber. chem. Ges.*, 1889, xxii, 87.

The abbreviations used by the *Journal* for the most commonly cited publications are listed below.

Am. Chem. J.
Am. J. Physiol.
Ann. chim. phys.
Ann. Chem.
Arch. ges. Physiol.
Arch. exp. Path. u. Pharmakol.
Arch. Int. Med.
[*Arkansas*] *Agric. Exp. Station, Bull.* [*5*, 1915].
Ber. chem. Ges.
Berl. klin. Woch.
Biochem. J.
Biochem. Z.
Bull. Hyg. Lab., U. S. P. H.
Bull. Soc. chim.
Carnegie Inst. Washington, Pub. No. [*156*, 1911].
Chem. Abstr.
Chem. Zentr.
Compt. rend. Acad.
Ergebn. allg. Path. u. path. Anat.
Gazz. chim. ital.
J. Agric. Research.
J. Am. Chem. Soc.
J. Am. Med. Assn.
J. Biol. Chem.
J. Chem. Soc.
J. Exp. Med.
J. prakt. Chem.
J. Ind. and Eng. Chem.
J. Physiol.
J. Russ. Phys. Chem. Soc.
Monatsh. Chem.
Proc. Roy. Soc. London, Series [*B*].
Proc. Soc. Exp. Biol. and Med.
Rec. trav. chim. Pays-Bas.
U. S. Dept. of [*Agric.*], *Bureau of* [*Plant Industry*], *Bull.* [*31*, 1914].
Z. physik. Chem.
Z. physiol. Chem.

In order to distinguish books from periodicals, titles of books are not underlined. The place of publication, the year, and the page should be given, and the edition when there is more than one.

References to books and journals should not be inserted in the text.

EXPLANATION OF FIGURES.

Typewrite explanations of the figures, whether for plates or text-figures, and number them to correspond with the figures to which they refer. The Bibliography precedes the Explanation of Figures.

FORMS AND ABBREVIATIONS.

Gram = gm.	10 millimolecular = 10.0 mM
Cubic centimeter = cc.	per cent (without a period).
Centimeter = cm.	a.m., p.m. (lower case).
Millimeter = mm.	In both large and small type write 30 cc., 20 mg., 20 gm.
Milligram = mg.	Always write 0.25; *i.e.*, with a zero before the decimal point.
Kilogram = kilo or kg.	
Tenth normal = 0.1 N	
Tenth molecular = 0.1 M	

Use the form 193–194.5°, placing the degree mark at the end only.

Use $[\alpha]_D^{20}$ for specific rotation (for 20° and sodium light). The values for $[\alpha]$ are best expressed in the following way:

$$[\alpha]_D^{25} = \frac{-0.25^\circ \times 2.1662}{1 \quad \times 0.1505} = -3.58^\circ$$

For normal and molecular solutions the expressions 2.5 N and 0.5 M are preferred to $2\frac{1}{2}$ N and $\frac{M}{2}$. In exceptional cases, however, as 3/16 M, the fractional form is more convenient.

Hydrated salts should be written as $CuSO_4.5H_2O$.

Small numbers in the text are usually written out, large numbers expressed in numerals; thus seven, but 250.

In numbers of four figures or over use commas; as 1,000, 10,000.

SPELLING.

Words like hemmorrhage, anesthetic, etc., are spelled with *e* (not *ae*).

Use *f* instead of *ph* for sulfur and sulfur derivatives.

Words serving as special names of definite objects, such as, Experiment 8, Table I, Rabbit 1, are written with capital letters.

NOMENCLATURE.

The usage of the American Chemical Society is followed. The following rules cover most of the terms used in this *Journal*.

Hydroxyl derivatives of hydrocarbons are to be given names

ending in *-ol*; as glycer*ol*, cholester*ol*, pinac*ol* (not pinacone). This applies also to alcohols of the sugar series; as mannit*ol*, heptit*ol*, etc.

Compounds which are not alcohols but have received names ending in *-ol* should be spelled *-ole*; as anis*ole*, ind*ole*. (German hydrocarbon names, as *Benzol*, *Toluol*, etc., are to be written benez*ene*, tolu*ene*, etc.)

Hydroxy- and not oxy- should be used in designating a hydroxyl compound; as *hydroxy*acetic acid, $CH_2(OH)CO_2H$, (not *oxy*-acetic acid).

As regards the endings *-in* and *-ine*, the latter should always be used for *basic* substances, and for them only; *-in* is used for glycerides, glucosides, bitter principles, proteins, etc.; thus anil*ine*, tyro*sine*, pur*ine*, morph*ine*; but gelat*in*, palmit*in*, amygdal*in*, album*in*, prote*in* (not prote*id*).

When a substituent is one of the groups NH_2,NHR,NR_2,NH, or NR, its name should end in *-ino*; thus $NH_2CH_2CH_2\,CO_2H$, β-am*ino*-propionic acid (not am*ido*propionic acid); $C_6H_5NHCH_2CH_2CO_2H$, β-anil*ino*propionic acid; $CH_3CH_2NH_2CO_2H$, α-am*ino*propionic acid.

The term ether must not be used for compounds which are properly called esters. Esters and metallic salts should be designated in the form, diethyl phthalate, methyl hydrogen succinate, sodium propionate, etc. (not as the diethyl ester of phthalic acid, the monomethyl ester of succinic acid, or the sodium salt of propionic acid).

Acid radicals, such as C_6H_5CO, must have names ending in *-yl*, and their compounds with halogens, as C_6H_5COCl, are to be termed chlorides, bromides, etc. Thus, benzo*yl* chloride (not chloride of benzoic acid or benzoic acid chloride).

The connective *o* is to be used in such combining forms as amin*o*-, brom*o*-, chlor*o*-, cyan*o*-, and iod*o*-; thus brom*o*benzene, chlor*o*acetic, nitr*o*aniline. A few exceptions to this rule are permitted on account of long established usage; as acetamide, cyanamide.

Substances containing the group SO_3H should, if possible, be called sulfonic acids; failing this, sulfo compounds; thus phenylsulfonic acid, $C_6H_5SO_3H$, and sulfobenzoic acid, $HO_2CC_6H_4SO_3H$.

Salts of organic bases with hydrochloric acid should be called hydrochlorides (not hydrochlorates or chlorhydrates).

Salts of chloroplatinic acid are called chloroplatinates (not platinichlorides), and the formulas should be written in the form $(CH_3NH_2)_2H_2PtCl_6$. Salts of thiocyanic acid, HCNS, should be called thiocyanates. Use sodium thiosulfate for $Na_2S_2O_3$.

The word hydroxide should be used for a compound with OH, and hydrate for a compound with H_2O; thus, chlorine hydrate, $Cl_2.10H_2O$; barium hydroxide, $Ba(OH)_2$.

Greek letters should be indicated by Gk. on the margin of the manuscript.

The following letters are italicized and should be underlined: *o*-, *m*-, *p*-, *d*-, and *l*-, for ortho, meta, para, dextro, and levo.

Use *dl*- (not *r*-) for racemic.

CHARTS.

Ink.—Charts should be drawn with black ink.[1] Blue-black ink and typewriting do not make good reproductions.

Paper.—Charts should be drawn on paper with a smooth surface. The cross-barred paper on page 437 is satisfactory for this purpose, as the blue lines do not reproduce. When it is desired to reproduce the finer lines, the blue lines may be inked in or the green-lined coordinate paper similar to the sample on page 11 may be used. The green lines reproduce and appear as black lines.

Reduction.—Charts should be drawn large enough to stand a reduction of one-half or one-third. The amount of reduction must be taken into consideration when the chart is drawn, and the lines must be heavy enough, and the letters large enough to make clear reproductions when reduced. Letters and numbers should, when reduced, be not less than 2 mm. in height. The outside measurements for charts when reduced, including the legend, are 4 x 6½ inches. Authors must determine whether the chart is to be printed the long or the short way on the page.

Margin.—A margin of at least half an inch should be left around the chart.

The sample charts show the original size of the chart and the chart reduced to fit the page of the *Journal*.

[1] Higgins' waterproof India ink.

DRAWINGS.

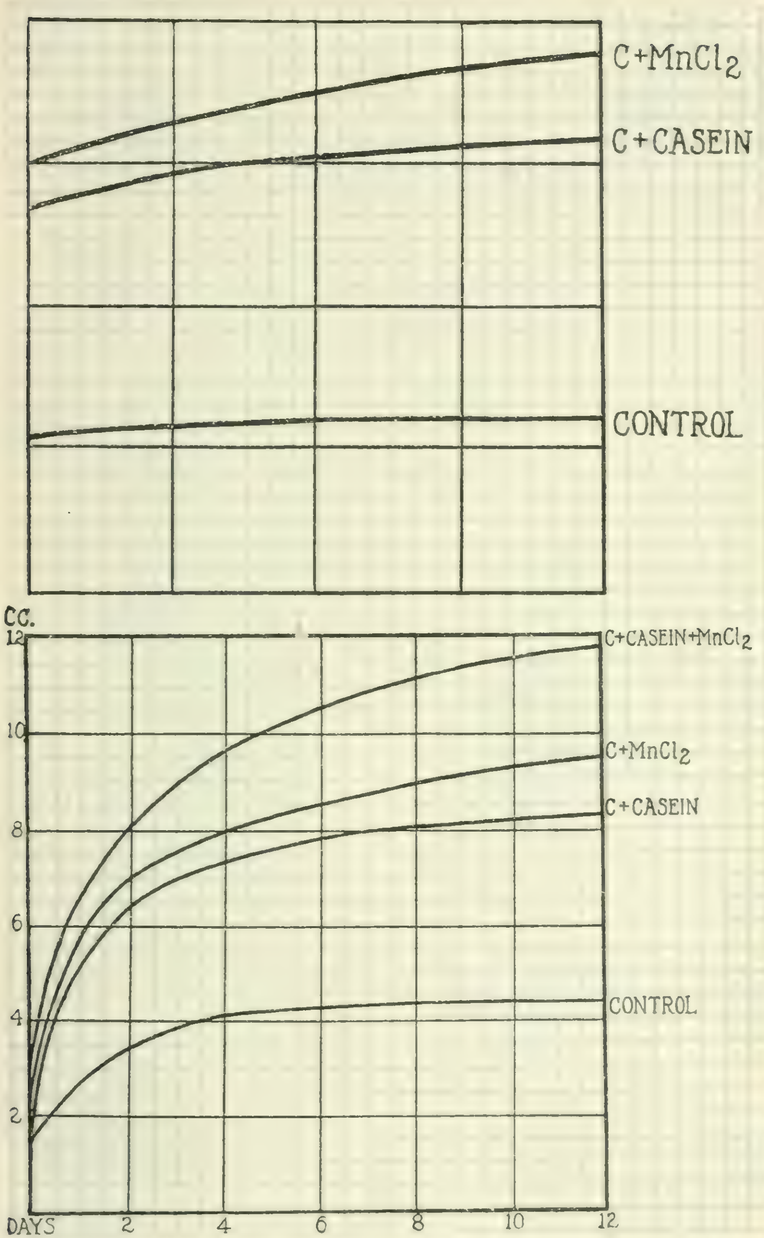
The above remarks concerning ink, paper, reduction, and margin apply also to drawings.

PHOTOGRAPHS.

Photographs should be carefully trimmed and mounted. If two or more are to appear on the same page they should be mounted together, and the size to which they are to be reduced must be considered.

Authors who have not the facilities for preparing photographs as described above should send them untrimmed and unmounted. The part to be reproduced should be marked either on the front or the back of the photograph, without scarring the surface. The top should always be indicated if there is a possibility of doubt as to which way the figure should be placed.

Figures should be numbered consecutively, in the order in which they are referred to in the text.



The lower chart shows the effect of reducing the upper chart to two-thirds of the original scale. The letters below are 2 mm. high.